SHIPMAIN
Overview
Aug 19,2003

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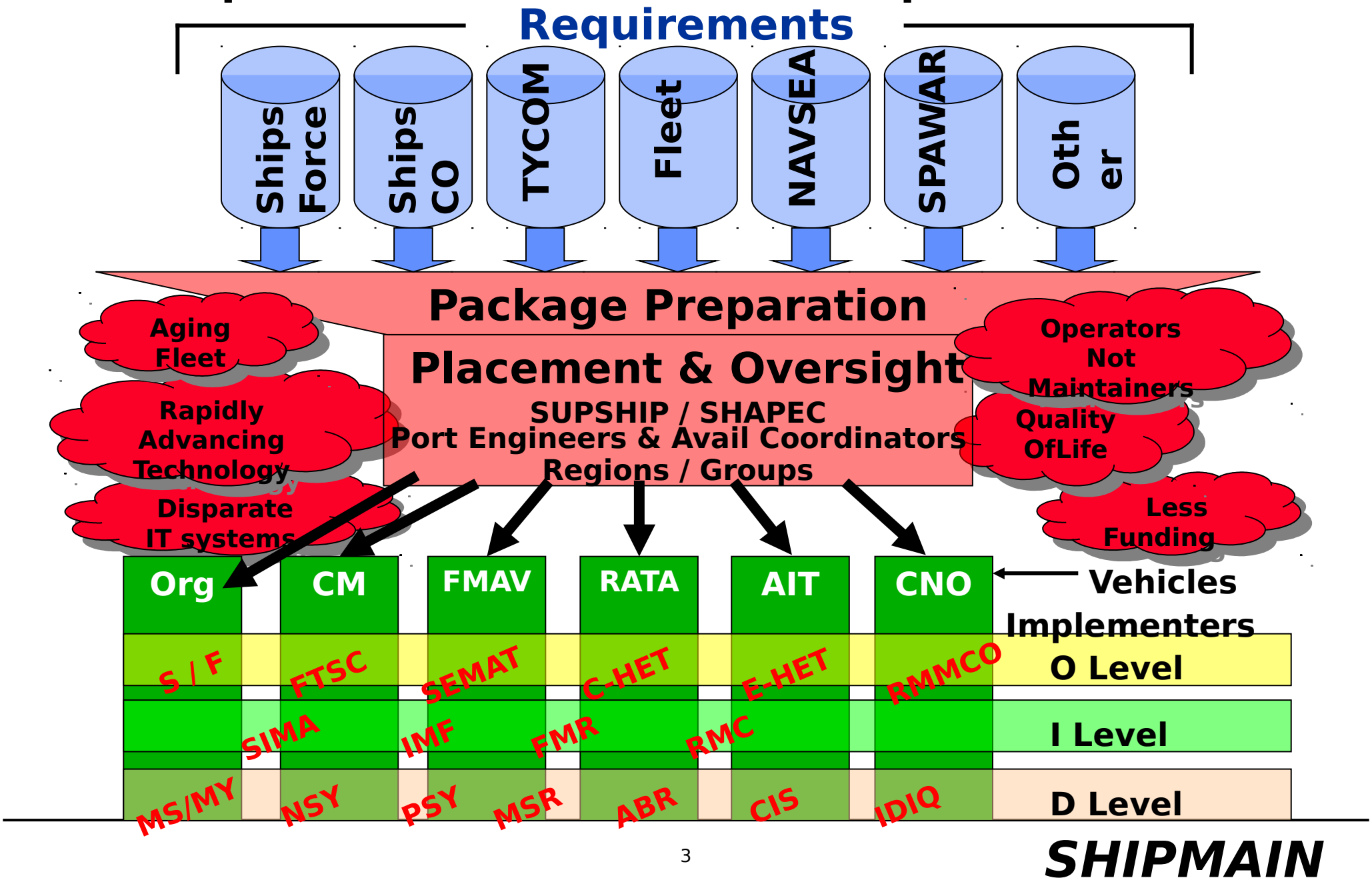
SHIPMAIN - Objectives

- **Install a common planning process for surface ship maintenance and alterations**
- **Increase the efficiency of the process without compromising its effectiveness**
- **Install a disciplined management process with objective measurements**
- **Institutionalize the process and a continuous improvement method**

Complex Processes - Surface Ship Maintenance

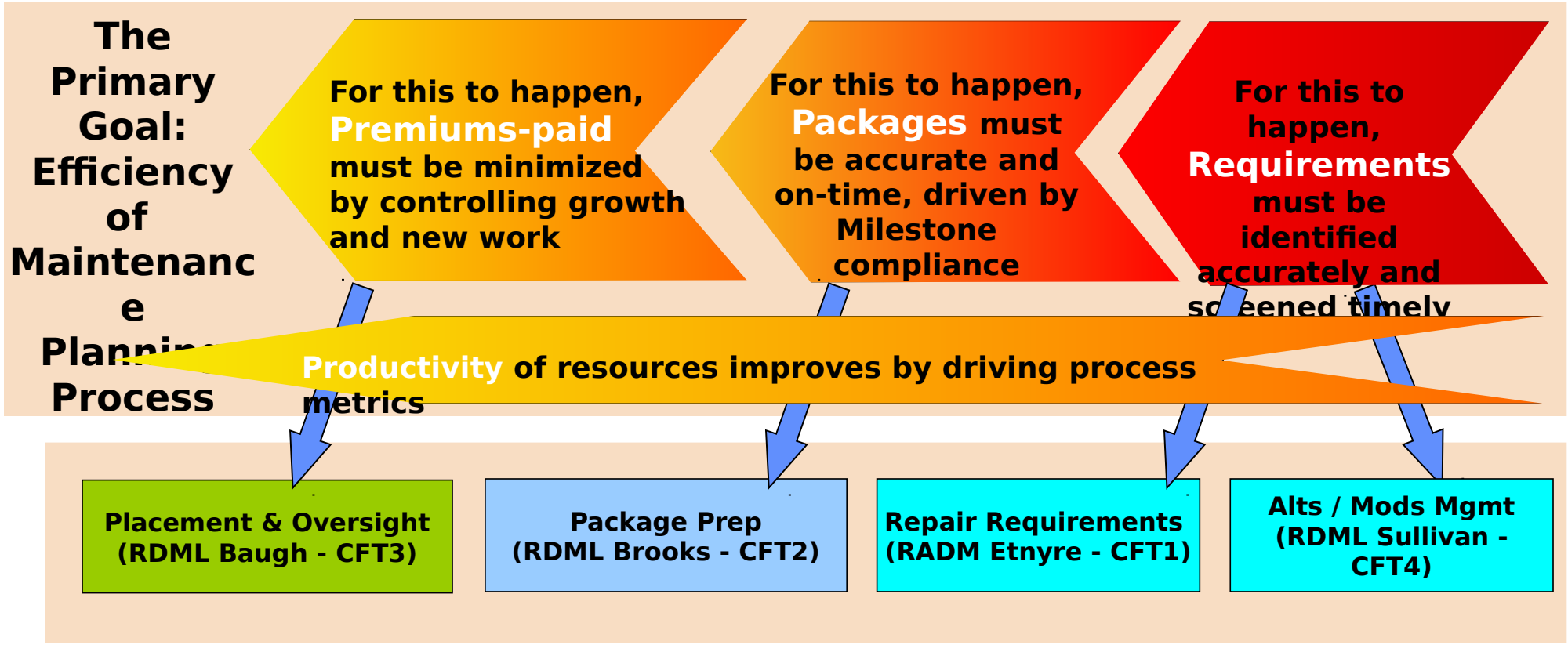


SHIPMAIN

Current Process Shortcomings

- Lack a common process and single process owner
- Excessive handoffs across multiple organizations
- Extreme optionalism throughout - - performance variability
- Unclear accountability for results
- Funding administration & uncertainty cause ‘churn’
- High “Premiums” in execution cost due to planning issues
- Excessive spending on Alts designed and procured, but not installed
- No Metrics linked to maintenance

SHIPMAIN - Strategy


The Primary Goal: Efficiency of Maintenance Planning Process
For this to happen, Premiums-paid must be minimized by controlling growth and new work
For this to happen, Packages must be accurate and on-time, driven by Milestone compliance
For this to happen, Requirements must be identified accurately and screened timely
Productivity of resources improves by driving process metrics
Placement & Oversight (RDML Baugh - CFT3)
Package Prep (RDML Brooks - CFT2)
Repair Requirements (RADM Etnyre - CFT1)
Alts / Mods Mgmt (RDML Sullivan - CFT4)

How Will Improvement Occur?

- **Ship Maintenance Teams operate the process and find barriers to hitting process targets.**
- **Cross Functional Teams on the attack**
  - **Remove barriers to hitting entitled “driver” metrics**
    - **Cycle Time (CT)**
    - **First Pass Yield (FPY)**
    - **On-Time Delivery**
  - **Take major actions to improve process**
- **Productivity rises due to CT and FPY improvement**

SHIPMAIN Macro Solution

Results

- **Reduce Premiums Paid at Depot level by 50%**
- **Reduce work screened as Emergent by 30%**
- **Improve Resource Productivity by 20%**

Process Drivers

- **Reduce CT approx 40% from 136 days to 87 days**
- **Increase FPY rollup of shore process approx 150% (from 26% to 63%)**

How?

- **Drive the Shipmain process vigorously**
- **Take major actions at RMC level**
- **Align with NEMAIS**

SHIPMAIN Process

- Focuses on four parts of the maintenance planning process:
  - *Alts & Mods Management*
  - *Requirements*
  - *Package Preparation*
  - *Placement and Oversight*

Alts and Mods Management

- Single process for all Alts
- Just 2 Types: Program & Fleet Alts
- Consistent business case for each
- Prioritized by Alts FOM
- 3 main decisions
  - Proceed to further engineering evaluation
  - Proceed to development
  - Procure material and schedule installation

Enables spending for highest value development and procurement

Requirements

- **Maintenance Team manages input of all work candidates:**
  - **routine operations tasks, PMS, ship's force and off-ship material assessments, class maintenance plan tasks, availability support routines and Fleet alts**
- **PEO and SYSCOMs add Program alts**
- **All work is documented in the CSMP**
  - **Auto screening of selected ICMP 2Ks**
  - **ICAVs provide electronic 2Ks**
- **Work candidates validated - Continuous flow of 2Ks to Planning Activity**
- **1 Step Brokering/Screening of work candidates**
- **Cost estimates and Figure of Merit (FOM) assigned to work candidates.**
- **Planning Board For Maintenance (PB4M)**

Package Preparation

- Use Master Spec Catalog (MSC)
- Planning by Executing Activity
- A single MSC entity owns the responsibility for maintaining the MSC files and issuing appropriate technical planning guidelines. The MSC must reside on a version of an AIS.
- Robust Feedback System (new specs, cost returns)
- Short CT advance planning milestones
- The Program Office and Planning Yards develop products, SIDS, SAR and ILS, for first time Mods / Alts. Subsequent installations are planned by the Executing Activity.

Placement & Oversight

- **Maintenance Team reviews KTR proposals on a continuous basis as received**
- **Proposals are forwarded to continuous Technical Advisory Report (TAR) process**
- **No Government Estimates required**
- **Detailed cost analysis used when price “reasonableness” cannot be determined**
- **Multi Ship/Multi Option contracts used for all private sector work**
- **Maintenance Team moves work items from CNO to CM Avails (or vice-versa) to optimize resources and economics.**
- **Maintenance Team able to level load Executor and reduce premiums paid**
- **Maintenance Team utilizes contract funding “ reservations”**

Convergence
Waterfront Integration & SHIPMAIN

- **SHIPMAIN revises the process (Ashore & Afloat)**
- **Waterfront Integration revises the organization (Ashore)**
- **Regional Maintenance Centers will blend the two efforts for the most efficient organization and process (Ashore)**
  - **Single integrated command**
    - **Includes SIMA, Naval Shipyard, Supervisor of Shipbuilding, FTSC, HET Port Engineers, etc**
- **Ship's COs will blend maintenance and training (Afloat)**
  - **Ship's Material & Maintenance Officer (SMMO) / 3M Coord.**
  - **Planning Board for Maintenance**

SHIPMAIN - Critical Success Factors

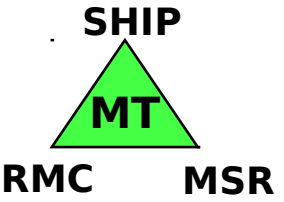
	Critical Success Factor	Accomplish Via
1	Common process used by all participants	■Defined by cross-functional teams
2	Single process owner with power to enforce	■Maintenance: CFFC ■Modernization: CNSF
3	Cross-functional maintenance team for a hull or group of hulls	■RMC Maintenance Teams (hull-focused)
4	Common process for funds administration: predictable and on time	■Same in PAC and LANT ■Annual maintenance plan per ship
5	AIS able to support required functionality	■Interim solutions ■Navy ERP longer term
6	A process to alter job duties and adjust manpower levels as needed	■Barrier removal team active
7	Communications at all levels	■Communications Team

Key Elements of Entitled Process

- Maintenance Team
- Predictable funds administration
- Prioritized list of work
- Metrics to track performance
- Master database of re-usable specs
- Early, collaborative involvement of Executing Activity
- Single modernization management process

Collectively, process changes improve value received for funds spent

Ship Maintenance Teams

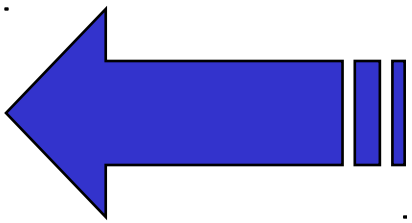


- **Primary responsibilities – Focused on a Hull**
  - **Identify and prioritize work required clearly and accurately**
  - **Determine when and where work items will be accomplished**
  - **Match resources to requirements**
  - **Budget responsibility**
    - **Execution and POM for future**
  - **Manages all ship availabilities**

Maintenance Team executes process for a ship

RMC Maintenance Team

Maintenance Team	
RMC	**Ship**
Port Eng CO	
SUPSHIP Mgr Heads	Dept
SIMA Ship Sup	SMMO
	3MC



Maintenance Group

Dedicated Personnel from the RMC, MSR, SY that support the MT.

- **Maintenance Team (MT):** Ship CO overall lead for MT / PE has lead for RMC. RMC MT has 1 or 2 ships and is co-located
- **Maintenance Group (MG):** Do not have to be co-located with MT, however the same person always supports MT/Ship (including MSR personnel).
- **RMC/MSR:** No single point of contact, can be anyone from the RMC, MSR or SY (e.g., production personnel).

Predictable Funds Administration

- **Same in both Fleets**
- **TYCOM provides guidance to RMC and Maintenance Teams**
- **RMC and Maintenance Teams develop business plans for each ship. TYCOM approves**
- **RMC provides budget for CNO and CM to Maintenance Teams for the fiscal year IAW business plans.**
- **ERA/TA managed by RMC**
- **ORA/TA managed by TYCOM**

aintenance Team knows their spending plan at all times and manages

Prioritized List of Work

- **For both Repair and Modernization candidates**
- **Objective Figure of Merit (FOM) for each work candidate**
- **Facilitates balance of priorities and spending**
  - **For one ship**
  - **Across ships**
  - **Across ship classes**

The highest value work is done with limited funds

Metrics to Track Performance

- **Same process metrics for each Maintenance Team and RMC**
- **Maintenance team metrics roll up to RMC leve**
- **Maintenance Team will review/present Metrics to RMC leadership**
- **RMC metrics roll up to Process TYCOMs/Fleet**
- **Speed, Quality, On Time Delivery, Premiums**

RMC knows progress of each Maintenance Team toward goals

Master Spec Database

- **Reusable specs for up to 80% of repetitive work**
  - **I level database**
  - **D level database**
- **Gov’t owned process to manage spec database**
- **On-line computer access for Executing Activities**
- **Specs not in data base written by Executing Activity and added to database using prescribe template**
- **Incentives to find ways to reduce maintenance costs**

Planning and execution cost reduced through consistent re-use

Early, Collaborative Involvement of Executing Activity (EA)

- **MSMO contracts with incentives to reduce total cost**
  - **Allows long term relationship for determining the best ship maintenance plan & schedule**
  - **EA more willing to invest in material & equipment**
- **Executing Activity (EA) develops specs as needed**
- **EA plans early to optimize project plan and cost in all availabilities (CNO, CM, EM)**
- **Partnering environment established**
  - **MT moves work between avails to level load EA / reduce premiums**

Early EA involvement reduces total cost

Modernization Management

- **RMMCO function transfers to Maintenance Team**
- **Only Alts we plan to install get developed**
- **No material bought until Alt scheduled for install and funded**
- **If Alt approved for install – TYCOM/PEO will have funds to install**
- **Use one common Alt AIS system**

What's Changed So Far?

- Consistent definitions for emergent or continuous maintenance work -- used regardless of executing activity.

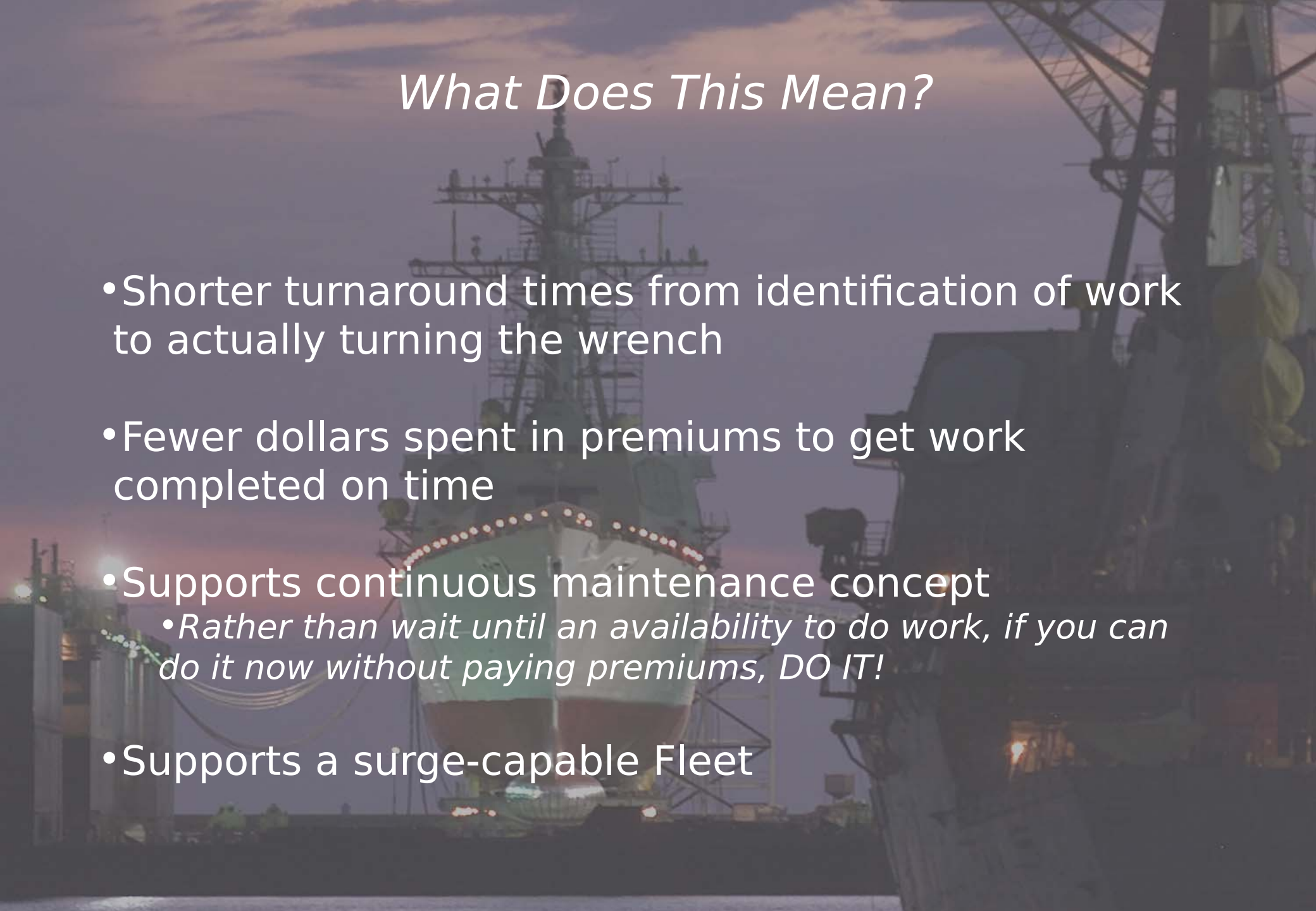
- Initiating development of training for maintenance teams, RMCs and ships

- Planning Board for Maintenance
  - *Chaired by ship CO and Port Engineer*
  - *Review current planned off-ship and O-level maintenance, CSMP quality and accuracy, future maintenance planning.*

- Using process metrics to track performance

SHIPMAIN - Results

Outcome?	Value?
Highest value work done with available funds • For any ship • Across ships	**Balanced readiness**
Reduced planning and execution cost per unit of work	**Recapitalize**
Faster, more agile process in adapting to changes	**Surge and Ops support**
Common process in every location	**Consistent product**
Ability to continually measure and improve process	**Always Improving**



What Does This Mean?

- Shorter turnaround times from identification of work to actually turning the wrench
- Fewer dollars spent in premiums to get work completed on time
- Supports continuous maintenance concept
  - *Rather than wait until an availability to do work, if you can do it now without paying premiums, DO IT!*
- Supports a surge-capable Fleet

Leadership Team Members

SHIPMAIN PIT

VADM LaFleur (CNSF) – CEO

VADM Balisle (NAVSEA)
RADM Etnyre (CNSL)
RADM Dwyer (PEO Carriers)
RDML Antanitus (SPAWAR)
RDML Bookert (N75)
RDML Bryant (OPNAV N43)
Mr. Ryzewic (CPF N43A)

VADM Malone (CNAF)
RADM Hamilton (PEO Ships)
RDML Sullivan (SEA 05)
RDML Brooks (CPF N43)
RDML Baugh (CLF N43)
RDML Welch (SG 2)
RDML Edwards (N76)
RDML Harnitchek (NAVICP)

COO – RDML Brooks **TG: Mr. Zych**

Process team

Leader: Mr. Dale Hirschman
TG: Rick Carosella

Communications Team

Leader: CAPT Cullin
TG: David Wesley

Metrics team

Leader: Hank Zajic
TG: Tom Belter

CFT1 'Requirements'

Leader: RADM Etnyre/Bryant
AO: CAPT Butler
Metrics: CDR Leary
TG: John Wagner

CFT2 'Package Preparation'

Leader: RADM Brooks/Mr. Ryzewic
AO: CAPT Coumes
Metrics: CAPT Hanson
TG: Bob Wilkins

CFT3 'Placement & Oversight'

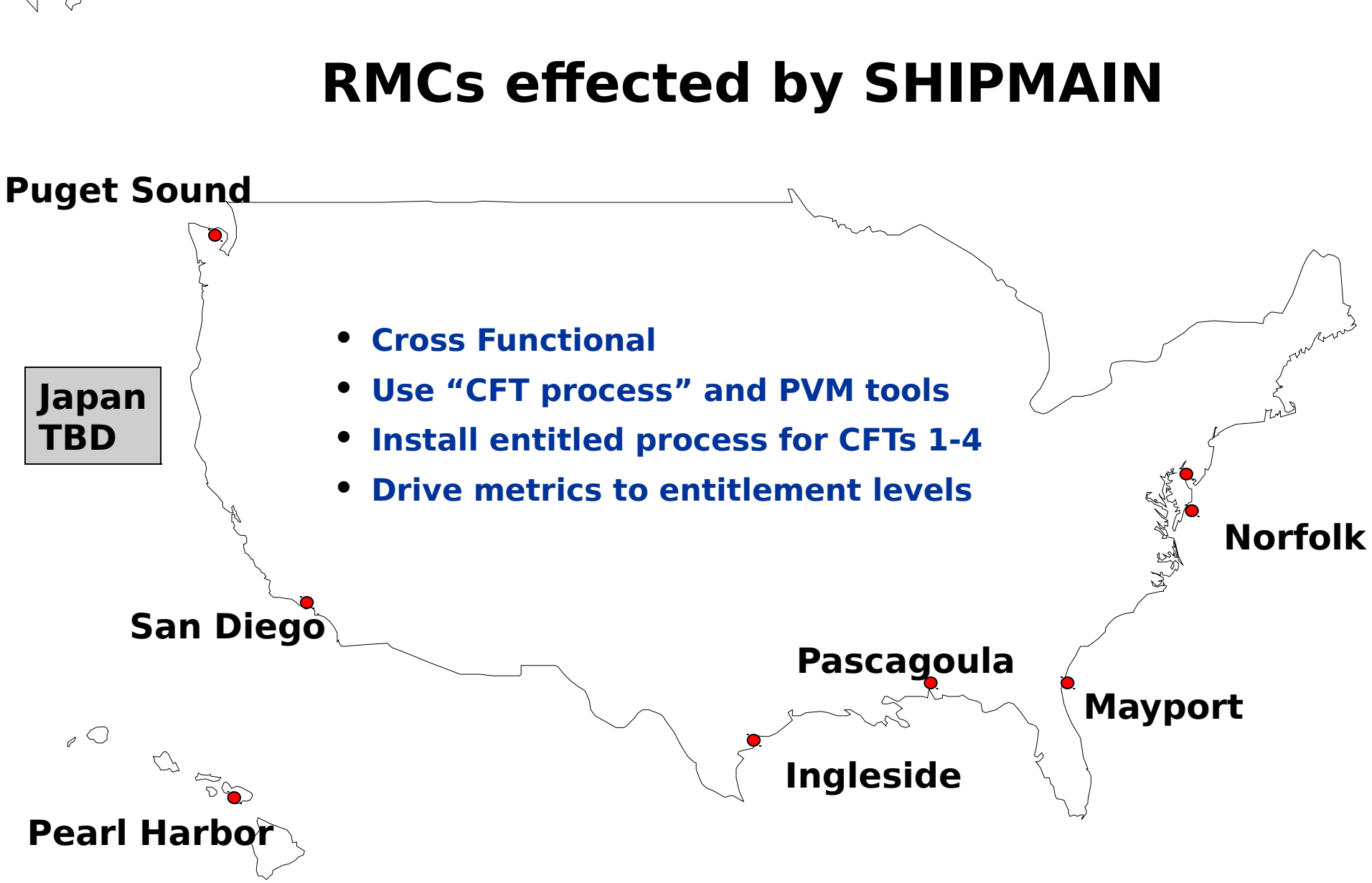
Leader: RADM Baugh/Edwards
AO: CAPT Baun
Metrics: CAPT Barbour
TG: Tom Meyer

CFT4 'Alts / Mods Mgmt'

Leader: RADM Sullivan/Dwyer
AO: CAPT White
Metrics: CAPT McManamon
TG: Jack Hall

Backup

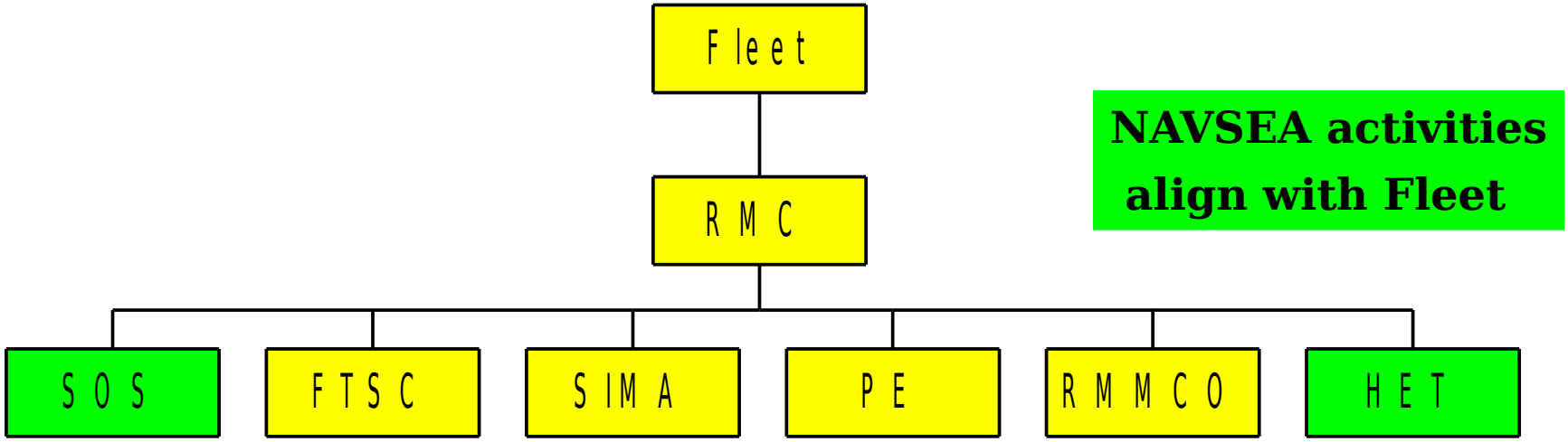
RMCs effected by SHIPMAIN



Notional RMCs (Cont'd)

- **SHIPMAN Port Teams align well with the proposed Waterfront Realignment Organization**

Proposed Waterfront Realignment Organization

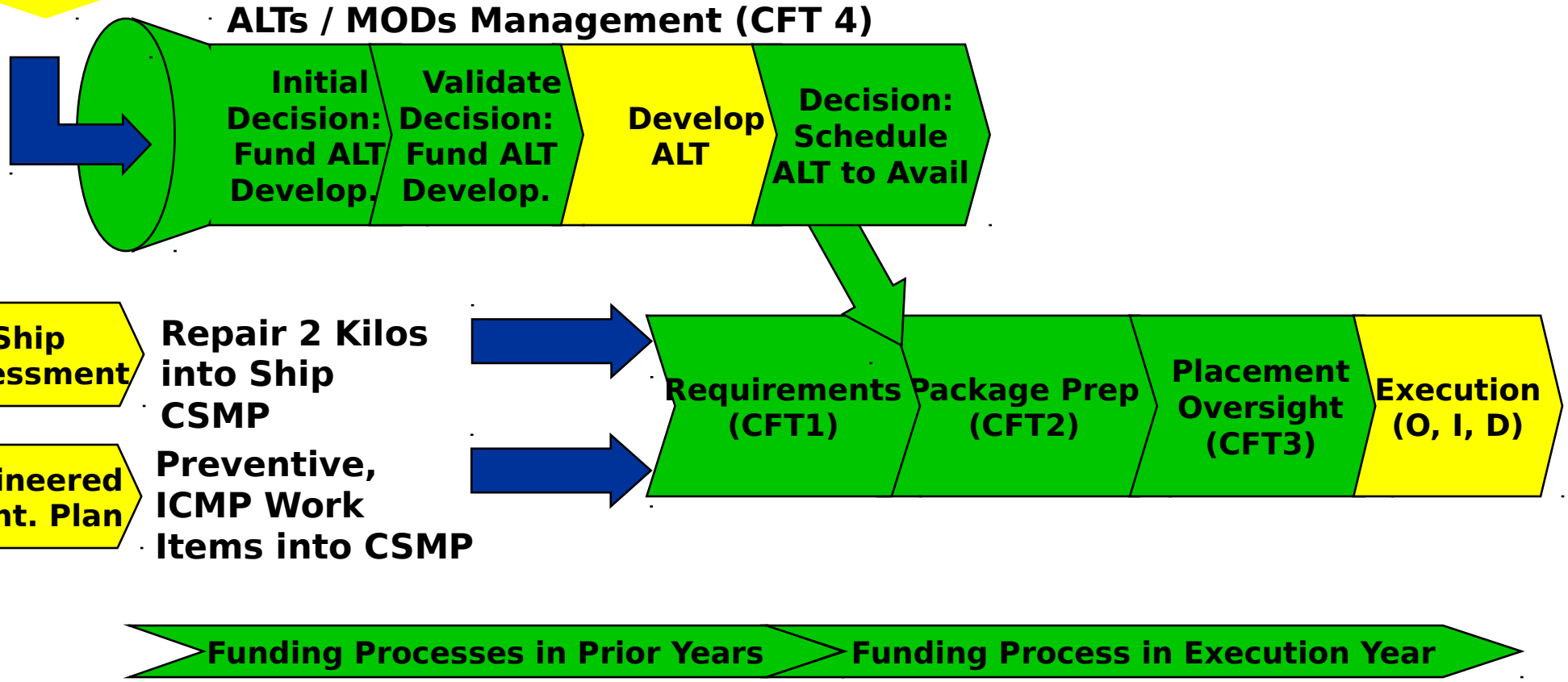


Current Scope of SHIPMAIN Initiative

Generators:
- Mission
- Reliability
- Maintainability
- Availability

Included-Active

Excluded


ALTs / MODs Management (CFT 4)
Initial Decision: Fund ALT Develop.
Validate Decision: Fund ALT Develop.
Develop ALT
Decision: Schedule ALT to Avail
Ship Assessment
Repair 2 Kilos into Ship CSMP
Engineered Maint. Plan
Preventive, ICMP Work Items into CSMP
Requirements (CFT1)
Package Prep (CFT2)
Placement Oversight (CFT3)
Execution (O, I, D)
Funding Processes in Prior Years
Funding Process in Execution Year

SHIPMAIN Dilemma

- Very complicated, poorly understood set of processes
- Extreme optionalism throughout - - performance variability
- Ship maintenance self-sufficiency is flat to declining
- Maintenance requirements are increasing
- Funding flows/uncertainty cause ‘churn’
- Budget pressures to recap/balance ILS elements
- No metrics to link readiness with maintenance
- BUT Ships still get underway and perform their

Are we getting the right readiness for the $$M invested?

Cultural Barriers

- No single process owner
- Lack of a process mindset
- Accept surface maintenance as disjointed functions
- Difficult to make and institutionalize major changes due to short tours and multiple silos
- What the CO wants, the CO gets
- “We want CASREPs fixed now” regardless of cost
- Decisions frequently made with emotion not data
- Unclear accountability of ships’ force and Port Engineers

Business Process Barriers

No common seamless horizontal process.

- **No mechanism to prioritize, coordinate, and control the launch of numerous initiatives**
- **Inadequate identification, verification, and articulation of the 2 Kilos**
- **Planning process is not meeting milestone OTD's.**
- **Excessive new work and growth drive premium costs**
- **The maintenance process does not align well with the ships' operating schedules**
- **Proliferation of waterfront organizations is a substitute process for a common seamless process**

Vision of Entitlement

- **Placement**
  - **Reduce cycle time (CT) from work item development to contract definitization - work package definitized at A-45**
  - **Increase use of forward priced items and work product library for TAR**
  - **Have full availability funding in place by A-60**
  - **Increase authorized work from ~50% at A-0 to 90%+ at A-0**
- **Oversight**
  - **Give Maintenance Team (MT) annual budget management responsibility**
  - **Reduce premiums paid by allowing MT to determine best placement and time frame for work balancing schedule and cost efficiency – working within the RMC's business rules and guidance for port-level management.**
- **Closeout**
  - **Increase MT ability to use funds for jobs above FOM threshold:**
    - **Reduce CT for financial closeout of availability CLIN**
    - **Reduce CT for annual financial closeout**

Placement & Oversight Entitled Process

- **Goal: A flexible placement process that supports an enhanced surge capability while avoiding premiums**
  - **Increase responsiveness with a placement process that allows ability to react to schedule changes without penalty and shift work between CNO availabilities and CM availabilities**
  - **One placement process for CNO availability and CM**
  - **<u>Schedule</u> flexibility : reduce cycle time to move work from identification to planning to placement and execution**
  - **<u>Quality</u> improvement : increase FPY, execute what we plan**
  - **<u>Cost</u> reduction: reduce overall costs by avoiding premiums for work (growth and new work)**